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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte POD-NERS, L.L.C.

Appeal 2007-3938
Reexamination Control 90/005,892
Reissue Application 09/773,303
Patent 5,894,079
Technology Center 1600

Decided: 29 April 2008

Before TEDDY S. GRON, ADRIENE LEPIANE HANLON, and
CAROL A. SPIEGEL, *Administrative Patent Judges*.

SPIEGEL, *Administrative Patent Judge*.

DECISION ON APPEAL

I. Statement of the Case

Appellant appeals pursuant to 35 U.S.C. §§ 134 and 306 from the final rejection of claims 1-15, 51, 52, and 56-64. Claims 16-50, 53, and 65-71, the only other pending claims, have been withdrawn from consideration (App. Br.,¹ 3; Ans.,² 2). We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM.

The subject matter on appeal relates to a variety of common field bean *Phaseolus vulgaris* plants and seeds, propagation material, progeny and hybrids thereof. Claims 1-4 read (App. Br., 25):

1. A *Phaseolus vulgaris* field bean seed designated Enola as deposited with the American Type Culture Collection under accession number 209549.
2. A field bean plant produced by growing the seed of claim 1.
3. Pollen of the plant of claim 2.
4. A field bean plant having all the physiological and morphological characteristics of the field bean plant of claim 2.

Claims 5-7 recited methods of producing a field bean plant by crossing a first parent field bean plant with a second parent field bean plant, wherein the first parent field bean plant or the second parent field bean plant or both are the field bean plants of claim 2, respectively (App. Br., 25). Claims 8 and 62 read (App. Br., 26 and 32):

¹ Appeal Brief filed 23 October 2006 ("App. Br.").

² Examiner's Answer mailed 13 March 2007 ("Ans.).

8. A field bean variety of *Phaseolus vulgaris* that produces seed having a seed coat that is yellow in color, wherein the yellow color is from about 7.5 Y 8.5/4 to about 7.5 Y 8.5/6 in the *Munsell Book of Color* when viewed in natural light.

62. Seed from [a] field bean variety of *Phaseolus vulgaris* having a germplasm for expressing a seed coat that is yellow in color as evidenced by a substantially uniform yellow color of the seed coat, wherein the substantially uniform yellow color plotted as a distribution in a population of the seed of sufficient number for purposes of ATCC deposit has a peak occurrence ranging from about 7.5 Y 8.5/4 to about 7.5 Y 8.5/6 in the *Munsell Book of Color* when viewed in natural light.

Claims 59-64 stand rejected under 35 U.S.C. § 112, first paragraph, for lack of original descriptive support. Claims 1-15, 51, 52, and 56-64 stand rejected under 35 U.S.C. § 112, first paragraph, for lack of adequate written descriptive support and for lack of enablement. Claims 1-7 and 59-64 stand rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Claims 1-15, 51, 52, and 56-64 stand rejected under 35 U.S.C. § 102(b) or, in the alternative, under 35 U.S.C. § 103(a) as unpatentable over prior art. [Ans., 8, 12, 18, and 20-21.³]

³ The Examiner's Answer contains a typographical error on pages 12 and 20. On both pages the rejection is incorrectly said to be directed to claims 1-15, 51, 52, and 56-58. The correct claims are recited in the rejections in the Final Office action mailed 14 April 2005 ("FR") at pages 10-11 and 16. Furthermore, Appellant addressed claims 1-15, 51, 52, and 56-64 in both its App. Br. (see e.g., 3) and Reply Brief filed 14 May 2007 ("Reply Br.") (see

II. Findings of Fact (FF)

The following findings of fact, and those set forth in the discussion, are supported by a preponderance of the evidence of record.

- [1] On October 15, 1996, Larry M. Proctor filed application 9700027 for a plant variety protection certificate ("the PVP 027 application") on a common field bean (*Phaseolus vulgaris*) variety named "Enola."
- [2] The real party-in-interest of the PVP 027 application is said to be POD-NERS, L.L.C.
- [3] On November 15, 1996, Larry M. Proctor filed application 08/749,449 for a utility patent ("the 449 application") entitled "Field Bean Cultivar Named Enola."
- [4] The real party-in-interest of the 449 application is said to be POD-NERS, L.L.C. (App. Br., 2).
- [5] The American Type Culture Collection (ATCC) received a viable sample of *Phaseolis vulgaris* [sic] Enola seeds on behalf of Larry Proctor, resulting in ATCC deposit designation 209549, on December 11, 1997 ("ATCC 209549").
- [6] On April 13, 1999, the 449 application issued as U.S. Patent 5,894,079 ("the 079 patent").
- [7] On May 28, 1999, a Plant Variety Protection Certificate was issued on the PVP 027 application.

e.g., 2). Therefore, since these two typographical errors in the Examiner's Answer do not appear to have prejudiced Appellant, we address both the § 112, first paragraph (enablement), and § 102/§ 103 final rejections of claims 1-15, 51, 52, and 56-64 on the merits.

- [8] On December 20, 2000, a request for reexamination of the 079 patent was filed by a third party requester and the resulting reexamination proceeding was assigned Control No. 90/005,892 ("the 892 reexam application").
- [9] A request to reissue the 079 patent was filed by POD-NERS, L.L.C. on January 31, 2001, and was assigned application no. 09/773,303 ("the 303 reissue application").
- [10] Reexamination of the 079 patent was ordered on February 6, 2001.
- [11] The reexamination and reissue proceedings were merged on June 13, 2001.
- [12] On May 22, 2001, a certificate of correction was issued for errors in the issued 079 patent, specifically at column 2, line 49, and at column 6, line 55.⁴
- A. The 079 patent ("Spec.")
- [13] According to the 079 patent, a package of dry edible beans was purchased in Mexico in 1994 and brought to the United States (Spec., 2:63-65).
- [14] The package of beans was said to contain a variety of beans including brown, black, yellow, and pinto beans (Spec., 2:63-67).
- [15] Later in 1994, the yellow beans were said to have been selected from the package, planted in Montrose County, Colorado, and allowed to self-pollinate (Spec., 2:67 through 3:3).

⁴ Appellant has requested an Examiner's Amendment to change "not" to "now" at column 4, line 60, of the 079 patent specification (App. Br., 9). The Examiner stated that she will amend the application as requested "[i]f there is a determination of allowable subject matter" (Ans., 35-36).

- [16] Resulting plants (the first planting) said to have "small leaves, good adherence of the pod to the branches of the plant, as well as resistance to pod shattering, were selected and harvested individually" (Spec., 3:10-13).
- [17] The seeds selectively harvested in 1994 were said to have been planted in Montrose County, Colorado, in 1995 and allowed to self-pollinate (Spec., 3:14-15).
- [18] Resulting plants (the second planting) said to have "good adherence of the pod to the branches of the plant, resistance to pod shattering and yields greater than the average yield of an average commercial bean plant (the average commercial pinto bean plant yields approximately 3.1 pinto beans per pod) were selected and harvested individually" (Spec., 3:15-22).
- [19] The seeds selectively harvested in 1995 were said to have been planted in Montrose County, Colorado, in 1996 and allowed to self-pollinate (Spec., 3:23-24).
- [20] Resulting plants (the third planting) said to have "good adherence of the pod to the plant, higher yield, and resistance to pod shattering were selected and harvested and bulked to produce the [Enola] cultivar" (Spec., 3:24-39, bracketed text added).
- [21] According to the 079 patent specification, the "Enola seed possesses a unique yellow color, matching most closely to 7.5 Y 8.5/4 to 7.5 Y 8.5/6 in the *Munsell Book of Color*, when viewed in natural light" (Spec., 3:32-34).

- [22] The "distinctive" yellow color of the Enola seed is said to be present throughout the entire seed coat and to remain uniform and stable season after season when viewed in natural lighting (Spec., 1:46-51; 2:58-62; 3:32-39; and, 4:30-32).
- [23] The hilar ring of the Enola seed is said to be "tan/yellow in color, matching most closely 2.5 Y 9/4 to 2.5Y 9/6 in the *Munsell Book of Color*, when viewed in natural light" (Spec., 3:39-41).
- [24] According to the 079 patent, "[n]o variant traits have been observed or are expected in Enola" (Spec., 4:36-37).
- [25] Further according to the 079 patent, "[t]he terminology used herein to describe Enola are those used by the Plant Variety Protection Office, unless otherwise noted, in Exhibit C, 'Objective Description of the Variety Edible Bean (*Phaseolus vulgaris* L.) [sic, ']' (Spec., 4:60-64).
- [26] Additional morphological and physiological characteristics of Enola are said to include (Spec., 5:1-51):

growth habit	determinate (in bush form)
color of flower	white
seeds/pod	approximately 3.1
seed shape	cuboid (when seed taken from middle of pod)
weight/100 seeds	43 gr (adjusted to 12% moisture)
physio. maturity	101 days.

B. The Plant Variety Protection 027 Application

- [27] The PVP 027 application states that the mature seed color is slightly variable between seasons and ranges from Munsell 5.0Y 8.5/4.0 to 7.5Y 8.0/8.0 when viewed in natural light (PVP 027 application, § II).
- [28] The PVP 027 application further states that the mature hilar ring is tan/yellow in color and ranges from Munsell 2.5Y 9/4 to 2.5Y 9/6 (PVP 027 application, § II).
- [29] According to the PVP 027 application, "[t]he yellow bean, 'ENOLA' var., is most likely developed from a landrace form [sic, of] the azufrado-type varieties" (PVP 027 application, EXHIBIT A, as amended January 23, 1999).
- [30] Further according to the PVP 027 application,

ENOLA, most closely resembles a variety of bean known as Pimono 78 (Mayacoba) in seed color and shape, plant architecture, leaf size and root structure. However, ENOLA differs from Pimono 78 in that the green color of the leaves is significantly lighter than the Pimono 78. The leaves of the ENOLA variety are 5.0GY 5/6 [based on MUNSELL BOOK OF COLOR] color reference system compared with the Pimono 78 which are 5GY 4/4 [based on MUNSELL BOOK OF COLOR] color reference system; the ENOLA are richer in green-yellow, and lighter than the Pimono 78. This difference between ENOLA var. and the Pimono 78 var., is stable regardless of the growing season. [PVP 027 application, EXHIBIT B, as amended 1-23-99, including bracketed text.]

III. Discussion

- A. Rejections based on 35 U.S.C. § 112, first paragraph
1. claims 59-64 (written description)

It is the Examiner's position that the subject matter of claims 59 and 62, and claims dependent thereon, lacks original descriptive support in the 079 patent specification for the newly recited limitations "wherein the yellow color plotted as a distribution in a population of the seed of sufficient number for purposes of ATCC deposit has a peak occurrence ranging from about 7.5 Y 8.5/4 to about 7.5 Y 8.5/6 in the *Munsell Book of Color* when viewed in natural light" (claim 59) and "wherein the substantially uniform yellow color plotted as a distribution in a population of the seed of sufficient number for purposes of ATCC deposit has a peak occurrence ranging from about 7.5 Y 8.5/4 to about 7.5 Y 8.5/6 in the *Munsell Book of Color* when viewed in natural light" (claim 62) (FR 3-4; Ans., 7-8). According to the Examiner, the specification repeatedly states that Enola seeds are of a uniformly distinct, seasonally-stable, unique yellow color that matches most closely to 7.5 Y 8.5/4 to 7.5 Y 8.5/6 in the *Munsell Book of Color*, when viewed in natural light, whereas claims 59 and 62 encompass any seed that would fall within a distribution of yellow colored seed, e.g., "any seed having a seed coat of any shade of yellow" (Ans., 28-29).

Appellant argues that the seed coat color of Enola inherently exists as "a distribution in a population of the seed of sufficient number for purposes of ATCC deposit . . . [having] a peak occurrence from about 7.5 Y 8.5/4 to about 7.5 Y 8.5/6 in the *Munsell Book of Color* when viewed in natural light" (App. Br., 7; Reply Br., 4-5). According to Appellant, the distribution

of color in any sample of seeds of a cultivar⁵ is a statistical representation of normal phenotypic⁶ variance expected to be found in non-cloned organisms as evidenced by the internet article "Quantitative Genetics"⁷ and by charts 15 and 31 in the Waibel Declaration⁸ (App. Br., 7-8; Reply Br., 5). Appellant argues that a deposit, i.e., ATCC 209549, may be claimed according to a description of properties that are inherent to the deposit, even if those properties are not disclosed *in haec verba* in the original specification (App. Br., 7; Reply Br., 4-5).

"The function of the description requirement [of the first paragraph of 35 U.S.C. § 112] is to ensure that the inventor had possession, as of the filing date of the application relied on, of the specific subject matter later claimed by him." *In re Wertheim*, 541 F.2d 257, 262 (CCPA 1976). The written description requirement of § 112 is satisfied if "the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor [Appellant] had possession at time of the later claimed subject matter." *In re Kaslow*, 707 F.2d 1366, 1375 (Fed. Cir. 1983) (agreeing with and quoting the Board's statement). Precisely how close the original

⁵ A cultivar is a cultivated plant that has been selected for its desirable characteristics that distinguish it from otherwise similar plants of the same species and which retains those characteristics when propagated (see e.g., FR, 6).

⁶ Phenotype refers to the visible physical or biochemical characteristics of an organism as determined by both genotype and environment.

⁷ "Quantitative Genetics," (July 18, 2005), http://www.mun.ca/biology/scarr/4241F_Quantitative_Genetics.html.

⁸ The ten page Declaration of Gil Waibel under 37 C.F.R. § 1.132 executed October 7, 2002, and appended forty-eight charts ("Waibel Declaration").

description must be to the claim language to comply with the description requirement of § 112 is determined on a case-by-case basis.

Here, the subject matter of claims 59-64 encompasses seeds produced by common field beans (*Phaseolus vulgaris*) having a seed coat with a certain average yellow color, whether that yellow color is the primary or only color; and, whether the yellow color is substantially solid, splashed, mottled, striped, flecked or dotted throughout the seed coat. The average yellow color may represent a very narrow or a very broad peak of color distribution. In contrast, the original disclosure of the 079 patent purports to describe seeds from a single common field bean cultivar designated "Enola" having a yellow color uniformly present throughout the seed coat with no particularly defined peak distribution.

The original disclosure of the 079 patent does not statistically analyze phenotypic traits. Appellant has not pointed to evidence of record, e.g., expert testimony, which establishes that one of ordinary skill in the art would have reasonably understood Enola seeds to possess an inherent "yellow color plotted as a distribution in a population of seed of sufficient number for purposes of ATCC deposit [that] has a peak occurrence ranging from about 7.5 Y 8.5/4 to about 7.5 Y 8.5/6 in the *Munsell Book of Color* when viewed in natural light" or any other distribution based on a fair reading of the 079 patent disclosure. In addition, the original disclosure of the 079 patent does not define a population of seed "of sufficient number for purposes of ATCC deposit" as of its November 15, 1996 filing date, and Appellant has not pointed to evidence that the term was a recognized term of art.

Appellant relies on two pieces of evidence in support of its inherency argument -- the Waibel Declaration, executed October 7, 2002, and an internet article entitled "Quantitative Genetics," printed on July 18, 2005. Neither establishes the state of the art with respect to statistical representations of observable (phenotypic) traits, e.g., seed coat color, of a cultivar on November 15, 1996, or the recognized statistical characteristics of "a sufficient [seed] number for purposes of ATCC deposit," e.g., ATCC 209549, at that time.

[31] Section 42, "Primary color specific," of the Waibel Declaration reads

The PVP application defines the seed coat color for Enola to be Munsell 5Y 8.5/4 to 7.5Y 8/8. In studies 1 and 3 (charts 31 and 15), most of the seed coat color for Enola, and Yellow River's 2001 crop and 2002 crop lots showed the PVP defined seed coat colors.

The Waibel Declaration suggests that the yellow color distribution of the seed coat of Enola is broader than the ranges recited in claims 59 and 62 or disclosed in the 079 patent specification. However, Appellant does not explain how this testimony demonstrates that the original disclosure of the 079 patent inherently describes the claimed subject matter. Furthermore, it is unclear how the data in charts 15 and 31 of the Waibel Declaration were generated, how the data was used to determine Munsell values, what the significance of the values in the plant art is, and/or whether the data was collected from a number of seeds sufficient for purposes of ATCC deposit.

[32] According to the "Quantitative Genetics" internet article at page 8, a number of tools are used in quantitative genetics, including statistics,

which is said to measure central tendency (i.e., the average value of a group) and dispersion (i.e., how much something differs from the average value).

Appellant has not explained how the "Quantitative Genetics" internet article establishes an alleged inherent yellow color distribution as claimed in Enola seeds, generally, or in ATCC 209549, specifically. At best, the Waibel Declaration and the "Quantitative Genetics" internet article support the general proposition that some variation in observable traits naturally exists in non-clonal organisms. In short, Appellant has not established that the original disclosure of the 079 patent would have reasonably conveyed to one of ordinary skill in the art at the time that Proctor had possession of the subject matter of claims 59-64.

Based on the foregoing, we AFFIRM the rejection claims 59-64 under § 112, first paragraph, for noncompliance with its written description requirement.

2. claims 1-15, 51, 52, and 56-64 (written description)

It is the Examiner's position that the subject matter of claims 1-15, 51, 52, and 56-64 is not adequately described in the 079 patent as required by 35 U.S.C. § 112, first paragraph (FR, 4; Ans., 8). The Examiner separates the claims into two groups, one generic (claims 8-15, 51, 52, and 56-64) and the other specific to ATCC 209549 (claims 1-7). According to the Examiner, Enola cultivar defined by the seeds of ATCC 209549 is insufficient to describe the genus of *Phaseolus vulgaris* field bean varieties, as well as seed, pollen and propagation material therefrom, that produce seed having a yellow seed coat from about 7.5 Y 8.5/4 to about 7.5 Y 8.5/6 in the *Munsell*

Book of Color when viewed in natural light, as broadly claimed in claims 8-15, 51, 52, and 56-64 (FR 11-12; Ans., 8-12). Further according to the Examiner, the description of the seeds as deposit ATCC 209549 in the 079 patent is inconsistent with description elsewhere in the record (Ans., 12 and 30-32). Specifically, the Examiner maintains that the Conley Declaration⁹ submitted by Appellant describes the seeds in ATCC 209549 as genetically and phenotypically diverse, whereas the 079 patent describes them as having the single set of morphological characteristics at column 4, line 59, to column 5, line 51 (Ans., 9). According to the Examiner, Appellant's assertions contradict both its own statements that the Enola phenotype is stable and uniform in multiple environments (App. Br. 14) and statements in the 079 specification that no variant traits have been or are expected in Enola (FF 24; FR 6-8). Finally, the Examiner maintains that Appellant "has not identified what feature or features distinguish the claimed seed from other known *Phaseolus vulgaris* seeds" (FR, 6).

Appellant argues that possession of the invention of claims 1-15, 51, 52, and 56-64 has been demonstrated by (1) ATCC 209549, (2) the uniform and stable traits of Enola recited in the description and claims, and (3) an actual reduction to practice of the claimed invention, demonstrated by ATCC 209549 and documented in the drawings/photos of the patent application (Reply Br., 7). Appellant further argues that its Enola cultivar is not composed of cloned plants, but rather a "true to type" cultivar with stable and uniform traits (Reply Br., 9).

⁹ Declaration of Laura L. Conley under 37 C.F.R. § 1.132, executed March 25, 2003 ("Conley Declaration").

As explained in *University of California v. Eli Lilly and Co.*, 119 F.3d 1559, 1566 (Fed. Cir. 1997),

[t]o fulfill the written description requirement, a patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that the "the inventor invented the claimed invention." *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (1997); *In re Gosteli*, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989) ("[T]he description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed."). Thus, an applicant complies with the written description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that set forth the claimed invention." *Lockwood*, 107 F.3d at 1572, 41 USPQ2d at 1966.

In other words, the disclosure must convey with reasonable clarity to those skilled in the art that the inventor was in possession of the invention. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991).

"Application of the written description requirement, however, is not subsumed by the 'possession' inquiry. A showing of 'possession' is ancillary to the statutory mandate that '[t]he specification shall contain a written description of the invention,' and that requirement is not met if, despite a showing of possession, the specification does not adequately describe the claimed invention." *Enzo Biochem, Inc. v. Gen-Probe, Inc.*, 323 F.3d 956, 969 (Fed. Cir. 2002). "For biological inventions, for which providing a

description in written form is not practicable, one may nevertheless comply with the written description requirement by publicly depositing the biological material. . . . That compliance is grounded on the fact of the deposit and the accession number in the specification, not because a reduction to practice has occurred." *Id.*, 323 F.3d at 970.

The Examiner bears the initial burden of presenting evidence or reasons why persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claims. *In re Alton*, 76 F.3d 1168, 1175 (Fed. Cir. 1996). According to the Examiner,

the claimed invention is not fully described in the specification, as evidenced by Appellant's arguments and the Declarations of Conley with reference to Gepts. It appears that Appellant intends to claim a large genus of genotypes and phenotypes that have not been described in the specification, given Appellant's own assertions that the seed deposit comprises phenotypically varied seeds, and given the amendment of claims 59 and 62 to read on seeds that are not within the range of 7.5Y 8.5/4 to about 7.5Y 8.5/6 in the *Munsell Book of Color*. [Ans., 35.]

Thus, there are two issues before us -- first, as to claims 1-7, whether all the seeds in ATCC 209549 are Enola; and second, whether ATCC 209549 provides generic descriptive support for claims 8-15, 51, 52, and 56-64.

- [33] Laura Conley gave opinions on the application of molecular markers to plant breeding in the field of plant molecular biology (Conley Declaration, ¶ 1).

[34] According to Ms. Conley, Enola is genetically diverse and contains at least four distinct haplotypes¹⁰ (Conley Declaration, ¶ 22).

Additionally, at oral hearing, Appellant's counsel indicated that Enola has a "very large number of phenotypic traits" (Tr.,¹¹ 5:12-16) and that efforts at identifying factors that distinguish Enola from other plants have more or less been limited to the color of the seed and the hilar ring (Tr., 8:13-19). According to counsel, the 079 patent "on its face does not make any effort to disclose phenotypic variations" (Tr., 9:4-5). For example,

MR. LEE: There is a group of seeds in an ATCC deposit. As we have told her [the Examiner], none of those seeds is exactly the same, but they're all Enolas. I mean, if you take any Enola, the very best stuff. I mean, you've grown it carefully, haven't let it get cross-pollinated.

One could say that is the stuff that is in the patent, as a matter of fact. But putting that aside, you have in the ATCC deposit Enola.

JUDGE GRON: So if we send away to this depository and we say, I want one of the seeds, and they send you one, it may or may not be one that falls within, for example, the scope of claim 10, the scope of claim 5. May or may not.

MR. LEE: It probably will.

JUDGE GRON: It probably will but it may not.

¹⁰ Haplotype refers to the allelic constitution of several loci on a single chromosome.

¹¹ Transcript of Oral Hearing held January 16, 2008 ("Tr.").

MR. LEE: That is possible. But if it falls outside the scope of our claims, it is not infringing.

JUDGE GRON: It is not enabled, however. Because they went to the deposit, they got them to send them a piece of seed, and it doesn't meet those claims.

MR. LEE: Well, there are many others that do.
[Tr., 11:2-19, bracketed text added.]

However, according to statements in the 079 patent (FF 24) and by Appellant (see e.g., App. Br. 14), no variant traits have been or are expected in Enola, i.e., its phenotype is stable and uniform in multiple environments. In view of the Conley Declaration and the conflicting statements above, the Examiner has provided a sufficient basis for questioning whether all the seeds in ATCC 209549 are Enola and whether the 079 patent specification describes uniform and stable traits which distinguish Enola from its antecedents and related known varieties of common field beans (*Phaseolus vulgaris*, i.e., whether ATCC 209549 provides generic support for claims 8-15, 51, 52, and 56-64. Under these circumstances, possession of a seed sample as demonstrated by ATCC 209549 is insufficient to satisfy the statutory mandate that the specification contain a written description of the invention. *Enzo Biochem, Inc.*, 323 F.3d at 969. Appellant has not shown otherwise.

Based on the foregoing, we AFFIRM the rejection of claims 1-15, 51, 52, and 56-64 under § 112, first paragraph, for lack of adequate written descriptive support.

3. claims 1-15, 51, 52, and 56-64 (enablement)

According to the Examiner, the full scope of claims 1-15, 51, 52, and 56-58 is not enabled by the 079 patent disclosure because it would require undue experimentation to make and use the claimed invention in view of (i) the genotypic and phenotypic diversity of the seeds ATCC 209549 (FR, 11; Ans. 15-16, citing the Conley Declaration as well as the Waibel Declaration (Ans. 37)) and (ii) statements "in the response filed March 25, 2003 that '[P]rior to that trip [to Mexico], the applicant has never seen yellow beans, either in Mexico or the United States' (response filed March 25, 2003, page 14, fourth paragraph)" (Ans. 16-17, original bracketed text). Further according to the Examiner, "without a readily available source of germplasm containing the yellow seed coat characteristics, undue trial and error experimentation would be required to screen through the myriad of *Phaseolus vulgaris* plants available in the world, and progeny plants derived therefrom, to identify other field bean plants with the claimed characteristics" (Ans. 17). Still further according to the Examiner, Appellant has "not identified any selected traits that are stable and uniform and that differentiate the claimed seeds and plants from other known *Phaseolus vulgaris* seeds and plants" (FR, 11-12; Ans. 37) and, thus, "the deposit of a phenotypically varied population of seeds does not allow one of skill in the art to reproduce the same invention disclosed by Appellant in the specification" (FR, 12-13; Ans. 38).

Appellant relies on ATCC 209549 for purposes of meeting the enablement requirement (App. Br. 13). According to Appellant, "[e]ach and every seed on deposit belongs to the Enola cultivar. Therefore, one of

ordinary skill in the art could easily reproduce the claimed invention, for example, by accessing the ATCC deposit, as any seed on deposit would produce a plant of the claimed cultivar" (App. Br. 13; Reply Br. 10). As to the Waibel Declaration, Appellant suggests that "the most likely reason for the discrepancy between the text of point #42 and charts 15 and 31 is a typographical error in the Declaration of Gil Waibel at point # 42, . . . however, Appellant is not in a position to speak on behalf of Mr. Waibel" (Reply Br. 9-10).

The description requirement is separate from the enablement requirement of § 112, first paragraph. *Enzo Biochem*, 323 F.3d at 963; *Vas-Cath*, 935 F.2d at 1563 (recognizing the severability of the "written description" and "enablement" provisions of § 112, first paragraph).

"When rejecting a claim under the enablement requirement of section 112, the PTO bears an initial burden of setting forth a reasonable explanation as to why it believes that the scope of protection provided by that claim is not adequately enabled by the description of the invention provided in the specification of the application. . .". *In re Wright*, 999 F.2d 1557, 1562 (Fed. Cir. 1993). "That some experimentation is necessary does not constitute a lack of enablement; the amount of experimentation, however, must not be unduly extensive." *Amgen, Inc. v. Chugai Pharmaceutical Co., Ltd.*, 927 F.2d 1200, 1212 (Fed. Cir. 1991). "Whether undue experimentation is needed is not a single, simple factual determination, but rather is a conclusion reached by weighing many factual considerations." *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988). A number of factors are relevant to whether undue experimentation would be required to practice the claimed

invention, including "(1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims." *Id.*, 858 F.2d at 737 (Fed. Cir. 1988).

Here, the 079 patent discloses selective breeding of yellow beans from a package of dry edible beans purchased in Mexico through three plantings (FF 13-20) which is said to have resulted in "Enola" seed having a "distinctive" yellow color matching most closely to 7.5 Y 8.5/4 to 7.5 y 8.5/6 in the *Munsell Book of Color*, when viewed in natural light, which color is said to remain uniform and stable season after season (FF 21-22). A sample of Enola seed was deposited as ATCC 209549 (FF 5). Appellant relies on ATCC 209549 to satisfy the enablement requirement of § 112, first paragraph (App. Br. 13; Reply Br. 10). However, as noted by the Examiner (Ans. 16-17), Appellant has stated that prior to the trip to Mexico where the "source" package of mixed dry beans was purchased, Appellant had never seen yellow beans in Mexico or the United States (response filed March 25, 2003, page 14, fourth paragraph). Thus, it appears that to make and use the claimed invention, a skilled artisan would either have to duplicate Appellant's selective breeding of yellow beans from the package of dried beans purchased in Mexico in 1994 or rely on ATCC 209549 as a readily available source of germplasm containing the yellow seed coat characteristics claimed. In addition, the skilled artisan would have to be able to tell when "Enola" was achieved, i.e., when seeds and plants having stable

traits which distinguished Enola from closely related *Phaseolus vulgaris* plants or its antecedents was achieved.

Claim 1 and its dependent claims are drawn to Enola seed from ATCC 209549. Claims 8-15, 51, 52, and 56-64 recite seeds and common field bean plants from a field bean variety of *Phaseolus vulgaris* having yellow colored seed coats, wherein the yellow color is from or has a color distribution peak of about 7.5 Y 8.5/4 to about 7.5 Y 8.5/6 in the *Munsell Book of Color*, when viewed in natural light. However, Appellant has indicated that Enola has a "very large number of phenotypic traits" (Tr., 5:12-16); that efforts at identifying factors that distinguish Enola from other plants have more or less been limited to the color of the seed and the hilar ring (Tr., 8:13-19); and, that while a given seed in ATCC 209549 may be Enola, it might not be Enola (Tr., 11:2-19). Indeed, Ms. Conley testified that Enola is genetically diverse and contains at least four distinct haplotypes (Conley Declaration, ¶ 22; FF 34). Mr. Waibel testified that most of the seed coat color for Enola, and Yellow River's 2001 and 2002 crop lots showed a seed coat color of Munsell 5Y 8.5/4 to 7.5Y 8/8 (Waibel Declaration ¶ 42; FF 31).

Under these circumstances, we agree with the Examiner that given the breadth of the claimed invention; the variable phenotypic identity of the seeds of ATCC 209549 (which may or may not be Enola); the lack of a readily available source of germplasm containing the claimed yellow seed coat color; and, the apparent genetic diversity of Enola (as shown by the Waibel and Conley Declarations) coupled with the single working example in the 079 patent specification (directed to Enola ATCC 209549), it would

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have required undue experimentation to make and use the invention of claims 1-15, 51, 52, and 56-64 based on the 079 patent disclosure.

B. Rejection based on 35 U.S.C. § 112, ¶ 2

It is the Examiner's position that claims 1-7 and 59-64 do not particularly point out and distinctly claim the subject matter which Appellant regards as its invention (Ans., 18).

In *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996), the Court stated

As we noted in *General Elec. Co. v. Wabash Appliance Corp.*, 304 U.S. 364, 369 (1938), "[t]he limits of a patent must be known for the protection of the patentee, the encouragement of the inventive genius of others and the assurance that the subject of the patent will be dedicated ultimately to the public." Otherwise, a "zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims would discourage invention only a little less than unequivocal foreclosure of the field," *United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 228, 236 . . . (1942), and "[t]he public [would] be deprived of rights supposed to belong to it, without being clearly told what it is that limits these rights." *Merrill v. Yeomans*, 94 U.S. 568, 573 . . . (1877).

Thus, claims must "reasonably apprise those skilled in the art" as to their scope and be "as precise as the subject matter permits." *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1385 (Fed. Cir. 1986). "That determination requires a construction of the claims according to the familiar canons of claim construction." *All Dental Prodx, LLC v. Advantage Dental*

Products, Inc., 309 F.3d 774, 780 (Fed. Cir. 2002). "Foremost among the tools of claim construction is of course the claim language itself, but other portions of the intrinsic evidence are clearly relevant, including the patent specification and prosecution history." *Id.*, 309 F.3d at 780. Furthermore, "[i]t is well established that when the term 'substantially' serves reasonably to describe the subject matter so that its scope would be understood by persons in the field of the invention, and to distinguish the claimed subject matter from the prior art, it is not indefinite. Understanding of this scope may be derived from extrinsic evidence without rendering the claim invalid." *Verve, LLC v. Crane Cams, Inc.*, 311 F.3d 1116, 1120 (Fed. Cir. 2002).

As to claims 1-7, according to the Examiner, "[b]ased on the patent disclosure, it is presumed that Enola seed that is deposited as ATCC Accession Number 209549 is a bean cultivar of uniform genetic and phenotypic composition" (Ans., 15). However, this presumption is contradicted by the Polly Proctor II¹² and Conley¹³ Declarations submitted by Appellant which show the seed deposit to be genetically diverse (Ans., 18-19). According to the Examiner, "it is unclear what the uniform and stable selected characteristics in the claimed plants and seeds are, given that the Patent Owner has stated on the record that the seeds are heterogeneous in phenotype and there is also evidence of genetic diversity in the seeds that are deposited as ATCC Accession number 209549" (FR, 14). Therefore, the

¹² Declaration of Polly Proctor under 37 C.F.R. § 1.132 executed March 25, 2003 ("Polly Proctor II Declaration").

¹³ Declaration of Laura L. Conley under 37 C.F.R. § 1.132 executed March 25, 2003 ("Conley Declaration").

Examiner concludes that Appellant has not "clearly and distinctly" defined the claimed invention by depositing a genotypically and phenotypically divergent population of seed (Ans., 19).

According to Appellant, the seeds deposited with the ATCC are a heterogenous population, i.e., "the seeds deposited with the ATCC are of a single cultivar (Enola), which is comprised of a plurality of individuals that have unique genetic profiles" (App. Br., 13). However, Appellant argues that "[s]ince the Enola phenotype is stable and uniform in multiple environments, we must assume that at least part of the genotype (responsible for the visible properties) is uniform" (App. Br., 14). "The Enola cultivar is described throughout the patent disclosure as displaying specific uniform and stable phenotypic traits, e.g., seed coat color and hilar ring color" (Reply Br., 10). Therefore, Appellant concludes that one skilled in the art would have been able to determine whether a material infringes the claims or not by comparing the material to the claim limitation(s), e.g., a specified color in the *Munsell Book of Color* (Reply Br., 11).

The language of claims 1-7 appears devoid of any recited limitation useful as a basis for comparing whether any *Phaseolus vulgaris* field bean seed would infringe the claimed seed or its derivative materials. The 079 specification describes the Enola seed as having a unique yellow color (FF 21) which is said to be present through the entire seed coat and to remain uniform and stable season after season when viewed in natural lighting (FF 22). The 079 specification appears to have again filled-in information entered in the blanks on the initial 027 PVP application (FF 25); information that was subsequently amended to include additional descriptive material

comparing the characteristics of purportedly the closest related field bean plants, e.g., differences in leaf color vis-à-vis Pimono 78, which is not found in the original 079 specification (FF 28-30). Furthermore, Appellant has not denied that the Polly Proctor II and Conley Declarations show the ATCC deposited seeds to be genetically diverse. Moreover, at oral hearing, Appellant's counsel indicated that Enola has a "very large number of phenotypic traits" (Tr., 5:12-16) and that efforts at identifying factors that distinguish ENOLA from other plants have more or less been limited to the color of the seed and the hilar ring (Tr., 8:13-19). According to counsel, the 079 patent "on its face does not make any effort to disclose phenotypic variations. Our position from day one has been that those variations in trait are inherent" (Tr., 9:4-6). Counsel also indicated that any given seed within the ATCC deposit may or may not produce a field bean plant that produces a seed having a seed coat color from about 7/5 Y 8.5/4 to about 7.5 Y 8.5/6 in the *Munsell Book of Color* and a hilar ring color from about 2.5 Y 9/4 to about 2.5 Y 9/6 in the *Munsell Book of Color*, each color being viewed in natural light (Tr., 11:8-24). In short, either the seeds in ATCC 209549 have a uniform and stable phenotype (see e.g., App. Br., 14; FF 21) or they do not (see e.g., Polly Proctor II Declaration; Conley Declaration, ¶ 22; Waibel Declaration, § 42; Tr. 11:2-19).

Based on the foregoing, since Appellant has not shown that ATCC 209549 reasonably would have apprised those of skill in the art of the full scope of the claimed subject matter, we AFFIRM the Examiner's rejection of claims 1-7 under § 112, ¶ 2.

As to claims 59-64, according to the Examiner, the claim language reciting seed having a yellow color "wherein the yellow color plotted as a distribution in the population of the seed of a sufficient number for purposes of ATCC deposit has a peak occurrence ranging from about 7.5 Y 8.5/4 to 7.5 Y 8.5/6 in the *Munsell Book of Color* when viewed in natural light" (claim 59) or "wherein the substantially uniform yellow color plotted as a distribution in a population of the seed of sufficient number for purposes of ATCC deposit has a peak occurrence ranging from about 7.5 Y 8.5/4 to about 7.5 Y 8.5/6 in the *Munsell Book of Color* when viewed in natural light" (claim 62) is indefinite because the range of the yellow color is unclear (FR, 15-16; Ans., 19-20). Appellants argue that one of ordinary skill in the art would have understood the color of the claimed seed because "[r]ecordation of phenotypic observations as a function of frequency [e.g., for 2500 seeds considered sufficient for purposes of ATCC deposit] is a common tool for plant breeders" (App. Br. 15).

However, as pointed out by the Examiner, claims 59-64 are not limited to the seed coat color(s) of the ATCC deposited seeds of claim 1 or its inherent statistical distribution. Indeed, at oral hearing, Appellant's counsel stated that the scope of the claims should not be understood based on the deposit (Tr., 8:23-26) and that "[t]he scope of the claims in terms of the distribution of traits . . . is inherent in disclosure. Certainly not disclosed." [Tr., 8:26-9:1.]. However, we find that this "inherent disclosure" creates a "zone of uncertainty" that does not reasonably apprise those of skill in the art of the scope of claims 59-64. Therefore, we AFFIRM the Examiner's rejection of claims 59-64 under § 112, ¶ 2.

C. Rejections based on 35 U.S.C. § 102/§ 103

The Examiner has finally rejected claims 1-15, 51, 52, and 56-64 under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over any of

- (1) CIAT Accession No. G13 094 (deposited 1979; in CIAT *Phaseolus vulgaris* Catalog, 1992);
- (2) CIAT Accession No. G02 400 (deposited 1970; in CIAT *Phaseolus vulgaris* Catalog, 1992);
- (3) CIAT Accession No. G22 215 (deposited 1986; in CIAT *Phaseolus vulgaris* Catalog, 1992);
- (4) CIAT Accession No. G22 227 (deposited 1986; in CIAT *Phaseolus vulgaris* Catalog, 1992);
- (5) CIAT Accession No. 622 230 [sic, G22 230] (deposited 1986; in CIAT *Phaseolus vulgaris* Catalog, 1992);
- (6) CIAT Accession No. G11 891 (deposited 1980; in CIAT *Phaseolus vulgaris* Catalog, 1992);
- (7) Kaplan;¹⁴
- (8) Hernandez-Xolocotzi;¹⁵

¹⁴ Kaplan et al. (Kaplan), "Variation in the cultivated beans," in GUITARRERRO CAVE. EARLY MAN IN THE ANDES, T.F. Lynch (ed.), Academy Press, New York, p. 146 (1980).

¹⁵ Efraim Hernandez Xolocotzi (Hernandez-Xolocotzi), "Plant Introduction and Germplasm of *Phaseolus vulgaris* and other Food Legumes," in SERIES SEMINARS No. 2E: POTENTIALS OF FIELD BEANS AND OTHER FOOD LEGUMES IN LATIN AMERICA, Centro Internacional de Agricultura Tropical, Cali, Columbia, February 26 - March 1, 1973, pp. 253-258.

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(9) Voysest;¹⁶ and,

(10) Azufrado Peruano 87;¹⁷

in "light of the documents filed June 2, 2004, and light of Pallotini"¹⁸ (Ans. 20-21).¹⁹

[35] One thousand one hundred twenty-seven (1127) pages of documents were filed June 2, 2004.

According to the Examiner, the seeds described in each of the ten references cited above "comprise a yellow seed coat and yellow/tan hilar ring" and, each reference is sufficient to shift the burden to Appellant to establish that the prior art seed coat and hilar ring colors are not the same or substantially the same as claimed. *In re Best*, 562 F.2d 1252 (CCPA 1977) (Ans., 21-22). Otherwise, the Examiner considers the claimed seed to be an obvious morphological variant of the prior art seed "in view of the genetic heterogeneity of yellow bean varieties as demonstrated by the Conley

¹⁶ Oswaldo Voysest (Voysest), "Variedades de frijol en América Latina y su origen," Centro Internacional de Agricultura Tropical (1983), pp. 47-49. This decision cites the two page English translation provided in the section of Voysest titled "Mexico."

¹⁷ Salinas et al. (Azufrado Peruano 87), AZUFRADO PERUANO 87 ... [illegible], Secretaria de Agricultura y Recursos Hidraulicos et al., SARH Foileto Técnico No. 5, pp. 2-13. This decision cites the English translation provided on pp. 2, 6-12.

¹⁸ Pallottini et al. (Pallottini), "PLANT GENETIC RESOURCES: The Genetic Anatomy of a Patented Yellow Bean," *Crop Science*, Vol. 44, pp. 968-977 (2004).

¹⁹ The Examiner has withdrawn the final rejection of claims 1-15, 51, 52, and 56-64 under § 102(b) as anticipated by or, alternatively, under § 103(a) as obvious over Gepts ("Selection Methods of the Common Bean," in GENETIC RESOURCES OF PHASEOLUS VULGARIS BEANS, P. Gepts (ed.), Klever Press, pp. 503-541 (1988)) (Ans., 42).

Declaration" (Ans. 23). Further, according to the Examiner, since seeds are propagation material and pollen is part of a plant, both propagation material and pollen are necessarily taught by the prior art (Ans. 22). Still further according to the Examiner, the cuboid shape of a seed taken from the middle of a pod and seed germination in the dark are inherent properties or obvious variations of the prior art seeds (Ans. 22).

"A claim is anticipated if each and every limitation is found either expressly or inherently in a single prior art reference." *Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc.*, 246 F.3d 1368, 1374 (Fed. Cir. 2001) (citation omitted). "In general, a limitation or an entire invention is inherent and in the public domain if it is the 'natural result flowing from' the explicit disclosure of the prior art." *Schering Corp. v. Geneva Pharm., Inc.*, 339 F.3d 1373, 1379 (Fed. Cir. 2003).

A claimed invention is not patentable if the subject matter of the claimed invention would have been obvious to a person having ordinary skill in the art. 35 U.S.C. § 103(a); *KSR Int'l Co. v. Teleflex, Inc.*, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007); *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966). Facts relevant to a determination of obviousness include (1) the scope and content of the prior art, (2) any differences between the claimed invention and the prior art, (3) the level of skill in the art, and (4) relevant objective evidence of obviousness or non-obviousness. *KSR*, 127 S.Ct. at 1734, 82 USPQ2d at 1389; *Graham*, 383 U.S. at 17-18.

"[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a prima facie case of unpatentability." *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). The concept of *prima*

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facie unpatentability is a procedural mechanism, which requires the examiner to produce evidence sufficient to support a ruling of unpatentability in the first instance. *See In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). "If examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of the patent." *In re Oetiker*, 977 F.2d at 1445.

"[W]hen the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990); "[w]here . . . the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product." *In re Best*, 562 F.2d 1252, 1255 (CCPA 1977) (citation omitted).

1-6. the CIAT *Phaseolus vulgaris* Catalog 1992

According to the Examiner, the CIAT *Phaseolus vulgaris* Catalog 1992 accession listings for G13 094; G02 400; G22 215; G22 227; 622 230 [sic, G22 230]; and, G11 891 are prior art NPL documents 162-167, respectively (Ans. 6-7).

[36] None of the citations pointed to by the Examiner contain excerpts from the CIAT *Phaseolus vulgaris* Catalog 1992.

[37] For example, the "document" cited as CIAT Accession No. G13 094 from the CIAT *Phaseolus vulgaris* Catalog 1992 comprises a web link,

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twenty-one pages of what appears to be various search results for the terms "Mayacoba," "G13 094," and "G13094 Mayocoba,"

a morphological description of a PI 583653 accession number as having a "seedwgt" value of 37.00, and

a black-and-white copy of two seeds labeled 13094 and annotated "Reference: Dodds CIAT Re-exam docs".

- [38] A cursory review of reexamination file 90/005,892 and reissue file 09/773,303 revealed only one document labeled "Catálogo de Germoplasma de Frijol cumú *Phaseolus vulgaris* L." by "Unidad de Recursos Genéticos CIAT Centro Internacional de Agricultura Tropical" "Cali-Columbia Octubre 1992), hereinafter CIAT Oct. 1992 catalog, and containing pages 124 (Spanish), 60-61 (Spanish), and xxvi-xxix (English).
- [39] Page 124 of CIAT Oct. 1992 catalog listed CIAT nos. ranging from G13038 to G13140.
- [40] Thus, only one of the six CIAT accession numbers, i.e., G13094, is listed in the only CIAT *Phaseolus vulgaris* Catalog 1992 of record.
- [41] The entire entry for G13094 in the CIAT Oct. 1992 catalog is

NO CIAT	G13094
IDENTIFIER	MAYOCABA
REGLOCAL	
ORIG	MEX
PROC	MEX
CC PS	3.
TMN	G
HABT	1
TIPO	

[42] The CIAT Oct. 1992 catalog does not provide any information regarding seed coat or hilar ring colors of G1309 or mention any deposit in 1979.

Apparently, the Examiner has relied upon statements made by the third party requestor in its request for reexamination of the 079 patent filed on December 20, 2000 ("Request"). For example, according to the third party requestor,

The collection, characterization and maintenance of bean genetic resources are the global mandate of the International Center for tropical [sic] Agriculture (CIAT). . . . While the CIAT holds under the International trust agreement some 260 separate accession numbers with yellow seeds, we would like to draw your attention, in particular, to the existence of 6 accessions in the CIAT collection which are substantially identical in terms of the claims made in U.S. Patent 5,894,079. . . .

The six accessions all display the claimed yellow color. Significantly, they also have a yellow hilar ring . . . and are similar in growth habit to the "Enola" bean. A description of the six follows, and photographs are attached as exhibits PHOTOS A-F.

1. G13 094 called Mayocoba and released as a commercial variety in the 1970 [sic] in northern Mexico. THE INTERNATIONAL CENTER FOR TROPICAL AGRICULTURE (CIAT) obtained it in January 1979 from the Mexican institute INIA-CIAPAN-Sinoloa.

2. G02 400 called Mantequilla. It was collected by Howard Scott Gentry (USDA plant collector) (HSG-21953) in Alamos, Sonora, Mexico, in 1965. THE INTERNATIONAL CENTER FOR TROPICAL AGRICULTURE (CIAT) obtained it from USDA Beltsville (Mr. Harold Winters) in September 1970. It has a US plant introduction number: PI 312 090. [Request, pp. 4-5.]

[43] The record before us contains black-and-white copies of PHOTOS A-F attached to the Request.

However, the rejection of claims 1-15, 51, 52, and 54-58 set forth by the Examiner relies on the disclosure of the CIAT *Phaseolus vulgaris* Catalog 1992, not on allegations of a third party. The disclosure of the only CIAT *Phaseolus vulgaris* Catalog 1992 which appears to be of record is very limited and only lists one of the six accession nos. the Examiner asserts as anticipatory prior art, i.e., CIAT accession no. G13094 (FF 38-42). The Examiner has not provided a sufficient factual basis to support a *prima facie* case of unpatentability. For example, the Examiner might have included the relevant pages of the CIAT *Phaseolus vulgaris* Catalog 1992 or other evidence supporting the asserted disclosure being relied upon or have introduced color photographs of the claimed and prior art seeds for visual comparison of the yellow seed coat color into the record before us.²⁰ Since the Examiner has not provided sufficient factual evidence to support a *prima facie* case of unpatentability, we REVERSE the rejections of claims 1-15, 51, 52, and 54-58 under § 102(b) or, alternatively, under § 103(a) over

²⁰ The only "color" reference of record before us is a color copy of page 7.5Y of the Munsell Book of Color.

- (1) CIAT Accession No. G13 094 (deposited 1979; in CIAT *Phaseolus vulgaris* Catalog, 1992);
- (2) CIAT Accession No. G02 400 (deposited 1970; in CIAT *Phaseolus vulgaris* Catalog, 1992);
- (3) CIAT Accession No. G22 215 (deposited 1986; in CIAT *Phaseolus vulgaris* Catalog, 1992);
- (4) CIAT Accession No. G22 227 (deposited 1986; in CIAT *Phaseolus vulgaris* Catalog, 1992);
- (5) CIAT Accession No. 622 230 [sic, G22 230] (deposited 1986; in CIAT *Phaseolus vulgaris* Catalog, 1992); and,
- (6) CIAT Accession No. G11 891 (deposited 1980; in CIAT *Phaseolus vulgaris* Catalog, 1992).

The Board does not search through the thousand plus pages of text, charts and other materials submitted on June 2, 2004, to find the particular disclosure(s) which support the Examiner's assertions of inherent anticipation or obviousness over any of the ten references relied on. *See United States v. Dunkel*, 927 F.2d 955, 956 (7th Cir. 1991). It is not the factfinder's burden to search through a lengthy document disclosure for possible evidence which may support the position of the party with the burden of proof, here the Examiner.

7. Kaplan

- [44] In Table 7.1, Kaplan discloses a Guitarrero *Phaseolus vulgaris* seed variety, Pv 6, as having median seed dimension of 1.1 cm length, 0.79 cm width, 0.69 cm thickness, an average of 4 seeds/pod, and a yellow

and spherical morphology, and a "new to archaeology" distribution (Kaplan, 146).

The Examiner has failed to provide a sufficient factual basis to support a *prima facie* case of unpatentability. For example, Kaplan discloses a "spherical" seed shape (FF 44), whereas the 079 patent describes the Enola seed shape as "cuboid" (FF 26). Kaplan discloses an average of 4 seeds/pod (FF 44) versus the 079 patent's disclosure of an average of 3.1 seeds/pod (FF 26). Finally, the Examiner has failed to point to specific evidence indicating that the yellow color of the seed described by Kaplan has a Munsell color from about 7.5 Y 8.5/4 to about 7/5 Y 8.5/6 or a Munsell color of between about 5 Y 8.5/4 to 7.5Y 8/8 as suggested by the Waibel Declaration (FF 31). Nor has the Examiner established that one of ordinary skill in the art would have considered the above Munsell color to be an obvious variant of the unspecified yellow color described by Kaplan, e.g., due to differences in environment.

The 079 patent explicitly describes ATCC 209549 as having specific characteristics and the Examiner has not explained why Kaplan discloses seeds which reasonably appear to have or suggest these specific characteristics. The Examiner has not explained why the yellow color disclosed by Kaplan is the same or substantially the same as the yellow color recited in the claims or explained why the noted differences in seed shape and average number of seeds/pod are immaterial. The Examiner has not established that the claimed hilar ring color or cuboid seed shape is inherent or suggested by Kaplan. The Examiner has not indicated where in the massive document disclosure of June 2, 2004, or Pallottini, there is a

discussion of the seeds described by Kaplan. A *prima facie* case of unpatentability, whether based on anticipation under § 102 or obviousness under § 103(a), cannot stand without a sufficient factual basis.

Since the Examiner has not provided sufficient evidence to support a *prima facie* case of unpatentability, we REVERSE the rejection of claims 1-15, 51, 52, and 54-58 under § 102(b), or alternatively under § 103(a), over Kaplan.

8. Hernandez-Xolocotzi

[45] In Table 2, Hernandez-Xolocotzi discloses the composition of a mixture of bean seeds planted in the northeast region of the state of Puchla, Mexico, under uncertain climate conditions, low soil fertility and in association with maize (Hernandez-Xolocotzi, 257).

[46] Out of the 678 seeds from two species of *Phaseolus* in the mixture, 225 seeds ranging in diameter from 0.5 to 1.2 mm were yellow and 3 seeds were variegated yellow (Hernandez-Xolocotzi, 257).

We REVERSE the rejection of claims 1-15, 51, 52, and 54-58 under § 102(b), or alternatively under § 103(a), over Hernandez-Xolocotzi for similar reasons given above for our reversal of the rejection based on Kaplan. Specifically, the Examiner has not provided sufficient evidence to support a *prima facie* case of unpatentability, e.g., the Examiner has not explained why the yellow color disclosed by Hernandez-Xolocotzi is the same or substantially the same yellow color recited in the claims. Furthermore, the Examiner has not indicated where in the massive document disclosure of June 2, 2004, or Pallottini, there is a discussion of the seeds described by Hernandez-Xolocotzi.

9. Voysest

- [47] Voysest discloses that "Canarios" and "Azufrados" are among the bean varieties grown commercially in Mexico (Voysest, 1).
- [48] "In 1955 seed of the variety 'Canario 101' were distributed, resulting from individual selections in a collection found in Tacámbaro, Michoacán" (Voysest, 1).
- [49] "Few varieties such as 'Azufrado 33' were obtained through individual selections, while other [varieties] such as 'Canario 78' (Ahome), 'Azufrado 100' (Cahita 100), 'Culiaacán 200,' "Azufrado Pimono 78" (Mayocoba), 'Canario 72' (CIAS 72), and 'Toche 400' [were obtained] through hybridization" (Voysest, 2, bracketed text in original translation.).
- [50] According to Voysest, it is difficult to credit bean breeders for certain varieties given the large number of varieties produced in Mexico and the way the bean program is organized (Voysest, 2).

"The Examiner maintains that the beans taught by Voysest are Azufrado Peruano 87" (FR, 20; Ans., 42). While the English translation of Voysest mentions "Azufrado" and "Azufrado peruano" as two known types of Azufrado bean varieties, it does not mention "Azufrado peruano 87." The Examiner has failed to point to any evidence of record establishing that "Azufrado peruano," e.g., is an art-recognized synonym for "Azufrado peruano 87."

Once again the Examiner has not provided sufficient evidence to support a *prima facie* case of unpatentability. Voysest does not provide any morphological description of its seed, e.g., shape or weight, the plants

produced therefrom, estimated time to maturity, leaf morphology, disease resistance, or yield. Voysest does not discuss the Munsell color of its disclosed seed or the hilar ring. In short, the Examiner has not factually established that the seeds disclosed by Voysest are the same or substantially the same as those claimed. Nor has the Examiner established that one of ordinary skill in the art would have reasonably expected the Voysest seeds to be obvious variants of the claimed subject matter.

The Examiner has not indicated where in the massive document disclosure of June 2, 2004, there is a discussion of the seeds described by Voysest. As for Pallottini, according to the Examiner,

Pallotini et al [sic] provide evidence that seeds of the deposited Enola bean have an identical genetic fingerprint to seeds of Azufrado Peruano 87 (see the abstract; page 972 at the first full paragraph of the second column; Figure 2, and the last paragraph of page 976, for example). Azufrado Peruano 87 is a yellow-seeded bean from Mexico. Based on the molecular fingerprint, the deposited seed cannot be distinguished from the prior art seed, and Appellant has provided no evidence to the contrary. [Ans., 23.]

However, as stated above, the Examiner has not established that Voysest discloses Azufrado Peruano 87. Pallottini does not provide a factual basis for the Examiner's finding that Voysest describes the seeds Appellant claims.

Based on the foregoing, we REVERSE the rejection of claims 1-15, 51, 52, and 54-58 under § 102(b), or alternatively under § 103(a), over Voysest.

10. Azufrado Peruano 87

[51] Azufrado Peruano 87 is disclosed as having the following primary traits:

color of flower	white
days to 50% flower	49
physio. maturity	100
growth habit	semi-det.
internodes	7-9
plant height	43 cm
Pods/plant	23
seeds/pod	4.3
weight/100 seeds	42 gr
reaction to rust	resistant
reaction to virosis	tolerant
reaction to white mold	susceptible but escapes due to growth habit

(Azufrado Peruano 87, p. 9).

[52] Azufrado Peruano 87 is said to have an average yield of 2.6 tons/hectare, an approximately 100% increase over Azufrado Regional's average yield of 1.2 tons/hectare (Azufrado Peruano 87, p. 11).

11. Pallottini

- [53] According to Pallottini, based on amplified fragment length polymorphism ("AFLP") studies, "[o]ur results show that the DNA fingerprint of ENOLA is identical to a fingerprint found in Mexican yellow-seeded beans of the Peruano group" (Pallottini, 969).
- [54] Among the common field bean materials analyzed by Pallottini are Azufrado Regional 78, entry nos. 47 and 48; Azufrado Peruano 87, entry no. 49; and, Azufrado Pimono 78, entry no. 50 (Pallottini, 969).
- [55] Azufrado Peruano 87, Enola 2001, Enola 2000-2 and Enola 2002 are all described as yellow-seed cultivars by Pallottini (Pallottini, 969).
- [56] Based on probability calculations, Pallottini concluded that Enola most likely originated from direct selection within pre-existing yellow-bean cultivars from Mexico, most probably "Azufrado Peruano 87" (Pallottini, 976).

The Examiner argues that Pallottini reasonably establishes that the Azufrado Peruano 87 plant and seed, as disclosed by Azufrado Peruano 87, has an identical genetic fingerprint as the claimed Enola seed and plant (FR 19; Ans., 23). We find from the evidence that the Azufrado Peruano 87 plant and seed disclosed in Azufrado Peruano 87 reasonably appears to be substantially the same as the claimed Enola plant and seed. Both (i) produce white flowers, (ii) have approximately the same physiological maturity time of 100 vs. 101 days, (iii) show substantially the same growth habit of semideterminate vs. determinate, (iv) show substantially the same weight/100 seeds of 42 gr. vs. 43 gr., and (v) are yellow-seeded cultivars

(FFs 26, 51 and 55). The DNA studies performed by Pallottini were said to give the same DNA fingerprint for Enola and Azufrado Peruano 87 (FF 53). Pallottini concludes that the most likely origin of Enola was by direct selection within pre-existing yellow-bean cultivars from Mexico, most probably "Azufrado Peruano 87" (FF 56). Here, we find that the Examiner reasonably has established a *prima facie* case of anticipation sufficient to shift the burden to Appellant to show that the Enola cultivar, its propagating material, and seeds are not the Azufrado Peruano 87 cultivar, its propagating material, and seeds.

The Examiner also argues that ". . . due to the effects of different soils, environmental conditions, cultivation conditions and geographic conditions on the phenotypic characteristics of all plants, including beans, the claimed beans . . . are . . . morphological variants of the prior art lines. . ." (Ans., 48). The Examiner relies on the Waibel Declaration in support of her position.

[57] Mr. Waibel testified that "[p]lants show slight differences in how they develop each year depending on the environment they grow in" (Waibel Declaration, sentence bridging pp. 1-2).

Appellant argues that Pallottini merely shows "that it is more unlikely than likely that Enola resulted from Azufrado Peruano 87 without crossing" (App. Br., 21). Relying on the testimony of Ms. Conley, Appellant contends that Pallottini merely establishes that some similarities exist within a certain portion of their genomes (Reply Br., 14).

[58] Ms. Conley testified that "[t]he identification of a set of AFLP fragments that is identical for two individuals, does not 'prove' homogeneity of those individuals" (Conley Declaration, ¶ 23).

Appellant concludes that Pallottini does not prove that Azufrado Peruano 87 anticipates the claims (Reply Br., 14).

Alternatively, Appellant argues that the Waibel Declaration is insufficient to establish that the claimed invention is a morphological variant of Azufrado Peruano 87 because "slight differences" fall within the scope of phenotypic variances (Reply Br., 14). In our judgment, Appellant has failed to provide evidence sufficient to rebut the Examiner's *prima facie* case of unpatentability under § 102(b), or alternatively under § 103(a), based on the disclosure of Azufrado Peruano 87 in light of Pallottini and/or the Waibel Declaration. Appellant agrees that Pallottini shows similarities exist within certain portions of the genomes of Azufrado Peruano 87 and Enola. However, Appellant has failed to prove that the prior art Azufrado Peruano 87 and its propagating material, e.g., seed, are not the claimed Enola and propagating material. *In re Spada*, 911 F.2d at 708; *In re Best*, 562 F.2d at 1255.

Appellant might have provided expert testimony based on evidence of a comparison of Azufrado Peruano 87 and ATCC 209549 seeds under the same natural lighting conditions to show that the ATCC 209549 seeds have a substantially uniform seed coat color of about Munsell 7.5 Y 8.5/4 to about Munsell 7.5 Y 8.5/6 whereas Azufrado Peruano 87 does not, or similar comparisons, e.g., of hilar ring color, leaf color, or yield, etc. On balance, it is our view that the evidence of anticipation, or alternatively obviousness,

presented by the Examiner outweighs the evidence to the contrary proffered by Appellant. Accordingly, based on the foregoing, we AFFIRM the rejection of claims 1-15, 51, 52, and 56-64 under § 102(b) as being anticipated by, or in the alternative under § 103(a), as obvious over Azufrado Peruano 87.

IV. Order

Upon consideration of the record and for the reasons given, it is ORDERED that the decision of the Examiner rejecting claims 59-64 under 35 U.S.C. § 112, first paragraph (written description), is AFFIRMED;

FURTHER ORDERED that the decision of the Examiner further rejecting claims 1-15, 51, 52, and 56-64 under 35 U.S.C. § 112, first paragraph (written description), is AFFIRMED;

FURTHER ORDERED that the decision of the Examiner rejecting claims 1-15, 51, 52, and 56-64 under 35 U.S.C. § 112, first paragraph (enablement), is AFFIRMED;

FURTHER ORDERED that the decision of the Examiner rejecting claims 1-7 and 59-64 under 35 U.S.C. § 112, second paragraph, is AFFIRMED;

FURTHER ORDERED that the decision of the Examiner to reject claims 1-15, 51, 52, and 56-64 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a), as obvious over CIAT Accession No. G13 094 (deposited 1979; in CIAT *Phaseolus vulgaris* Catalog, 1992) is REVERSED;

FURTHER ORDERED that the decision of the Examiner to reject claims 1-15, 51, 52, and 56-64 under 35 U.S.C. § 102(b) as anticipated by,

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or in the alternative under 35 U.S.C. § 103(a), as obvious over CIAT Accession No. G02 400 (deposited 1970; in CIAT *Phaseolus vulgaris* Catalog, 1992) is REVERSED;

FURTHER ORDERED that the decision of the Examiner to reject claims 1-15, 51, 52, and 56-64 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a), as obvious over CIAT Accession No. G22 215 (deposited 1986; in CIAT *Phaseolus vulgaris* Catalog, 1992) is REVERSED;

FURTHER ORDERED that the decision of the Examiner to reject claims 1-15, 51, 52, and 56-64 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a), as obvious over CIAT Accession No. G22 227 (deposited 1986; in CIAT *Phaseolus vulgaris* Catalog, 1992) is REVERSED;

FURTHER ORDERED that the decision of the Examiner to reject claims 1-15, 51, 52, and 56-64 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a), as obvious over CIAT Accession No. 622 230 [sic, G22 230] (deposited 1986; in CIAT *Phaseolus vulgaris* Catalog, 1992) is REVERSED;

FURTHER ORDERED that the decision of the Examiner to reject claims 1-15, 51, 52, and 56-64 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a), as obvious over CIAT Accession No. G11 891 (deposited 1980; in CIAT *Phaseolus vulgaris* Catalog, 1992) is REVERSED;

FURTHER ORDERED that the decision of the Examiner to reject claims 1-15, 51, 52, and 56-64 under 35 U.S.C. § 102(b) as anticipated by,

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or in the alternative under 35 U.S.C. § 103(a), as obvious over Kaplan is REVERSED;

FURTHER ORDERED that the decision of the Examiner to reject claims 1-15, 51, 52, and 56-64 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a), as obvious over Hernandez-Xolocotzi is REVERSED;

FURTHER ORDERED that the decision of the Examiner to reject claims 1-15, 51, 52, and 56-64 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a), as obvious over Voysest is REVERSED;

FURTHER ORDERED that the decision of the Examiner to reject claims 1-15, 51, 52, and 56-64 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a), as obvious over Azufrado Peruano 87 is AFFIRMED; and,

FURTHER ORDERED that no time period for taking any subsequent action in connection with this appeal may be extended under 35 U.S.C. § 1.136(a) (2006).

AFFIRMED

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